Virginia DEQ
VPDES TAC Meeting

August 31, 2005 - Richmond, VA

Overview of Point Source Trading Experience

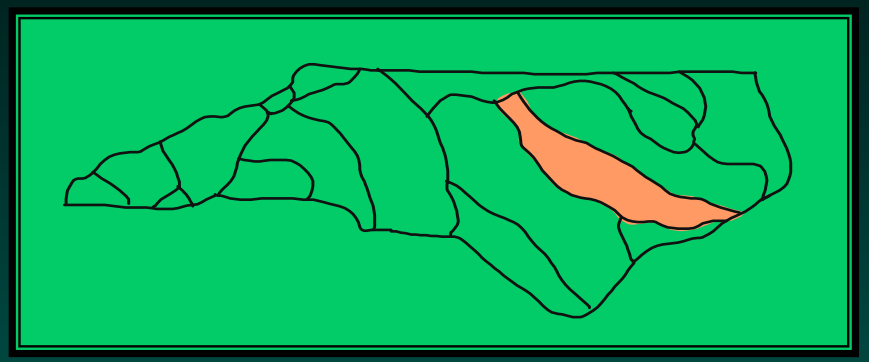
North Carolina's Neuse River Basin

Mike Templeton
North Carolina Division of Water Quality

Overview

- The Neuse River Basin
- Point Source Strategy
  - Allocations
  - Permits
  - Group Compliance Approach
  - Nutrient Offsets
- Where We Are Headed

Neuse River Basin



Regulatory Drivers: Neuse TN

- NC House Bill 1339 (1996)
- Nutrient Management Strategy rules (1997, 2002)
- Total Nitrogen TMDLs (1999, 2002)

➔ *By 2003, reduce TN load from PS & NPS to the estuary by 30% (1995 baseline)*

NSW Management Strategy

Broad-based Approach:

- Riparian Area Protection (buffers)
- Urban Stormwater Requirements
- Agricultural Requirements
- Nutrient Management
- Wastewater Discharge Requirements

T15A NCAC 2B .0232 - .0240

NSW Strategy for Point Sources

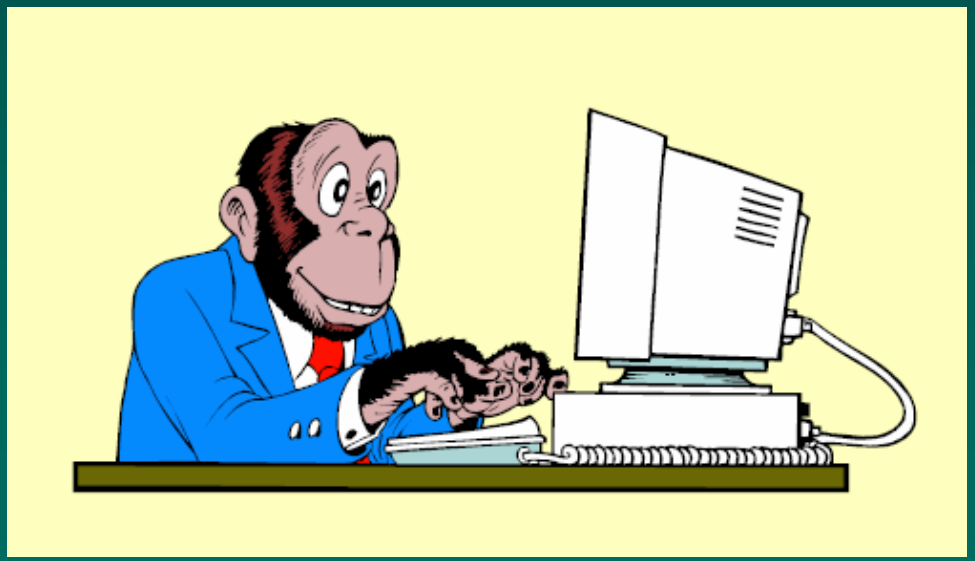
- Allocations for existing dischargers
- Provisions for new & expanding discharges
- Provisions for regionalization
- Group compliance option
- Offset payments option
- Protection against local impacts (“hot spots”)

PS Strategy - Allocations

- Applies to individually permitted dischargers with nitrogen-bearing wastestreams
- Sets initial nitrogen allocations for 110 existing dischargers, as annual mass loads
- Requires permit limits for larger dischargers (≥ 0.5 MGD), effective 2003

PS Strategy - Allocations

- Initial allocations
  - Aggregate PS allocation (WLA)
  - Grouped allocations – by type, size, location
  - Individual allocations



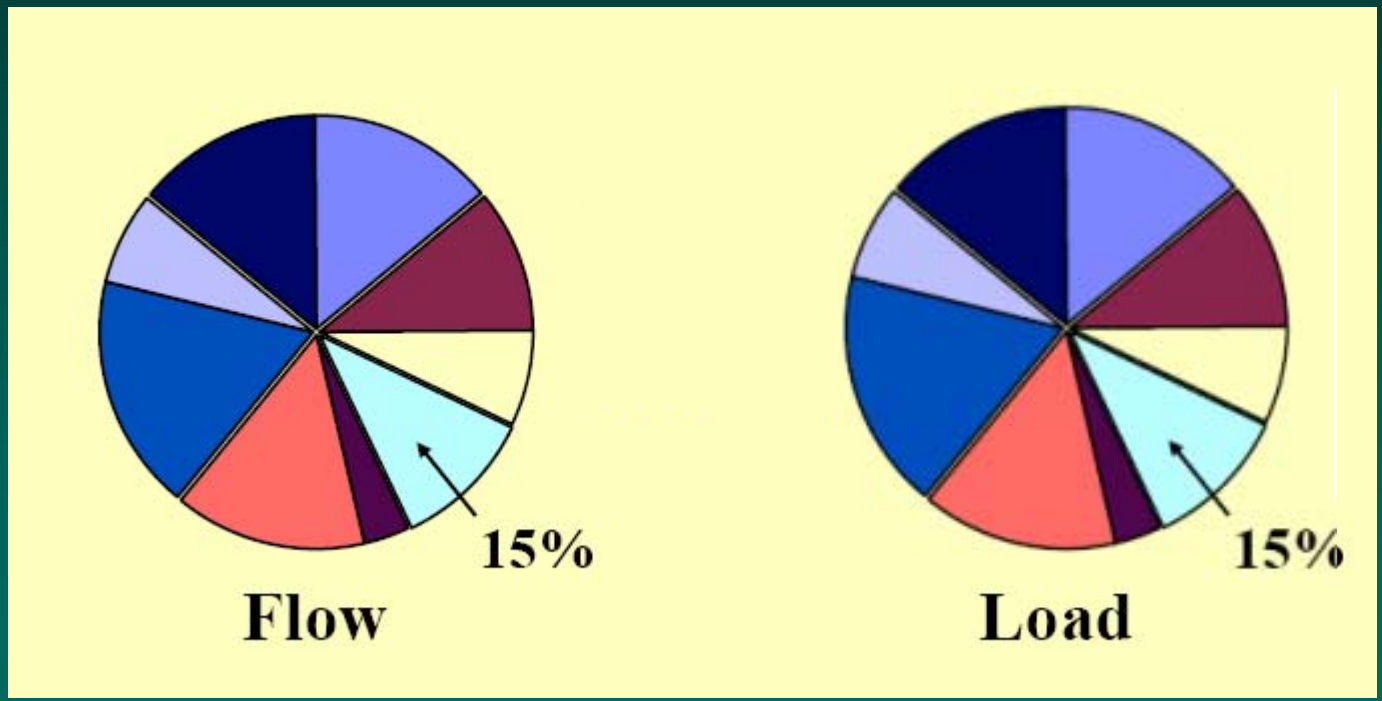
PS Strategy – Allocations

Discharger Groupings

- WWTPs ≥ 0.5 MGD, upstream (3)
- WWTPs ≥ 0.5 MGD, downstream (31)
  - Municipal (28)
  - Industrial (3)
- All WWTPs < 0.5 MGD (76)

PS Strategy – Allocations

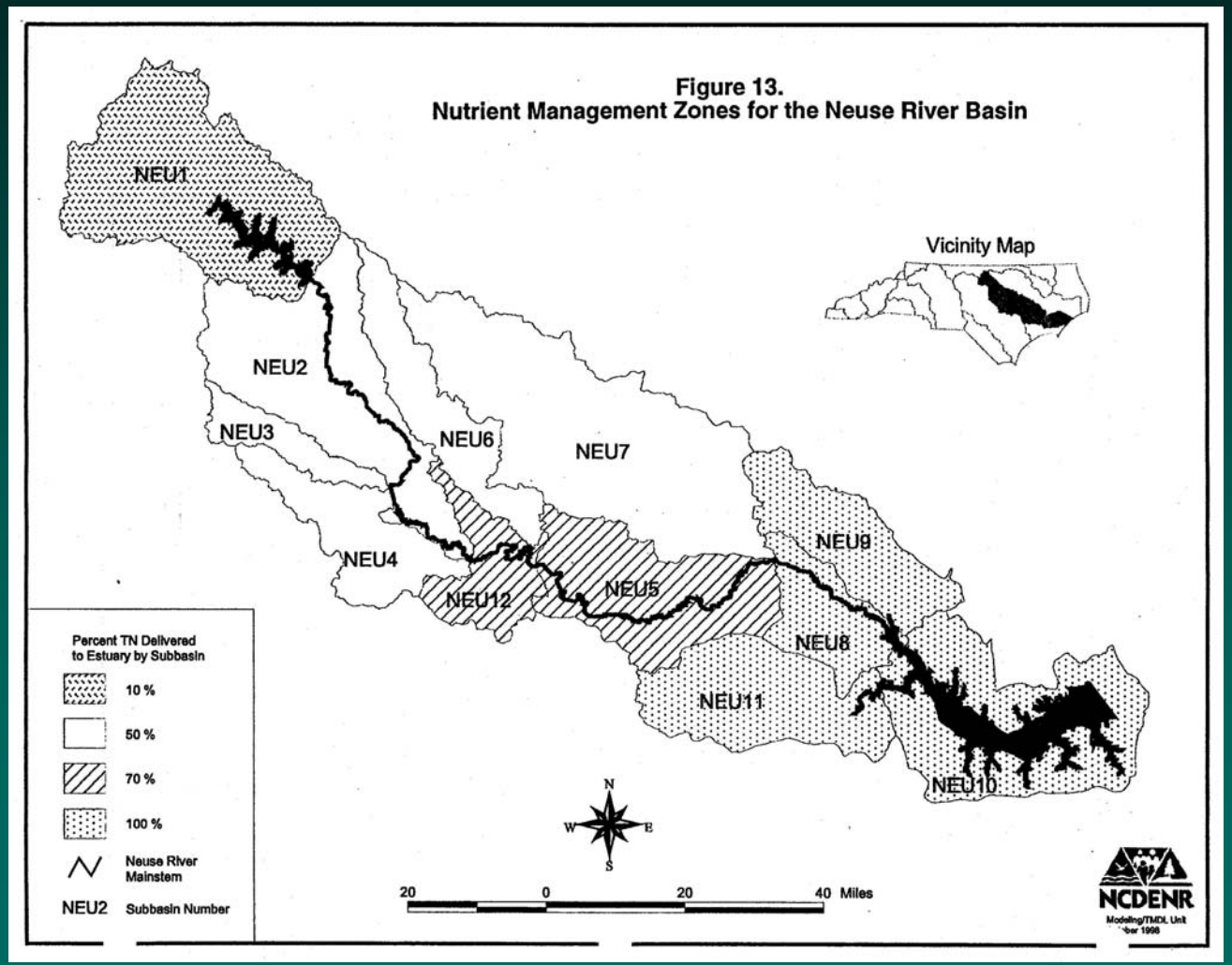
Group allocations divided in proportion to permitted flows:



PS Strategy - Fate & Transport

- TN delivery to the estuary varies with point of discharge
- Basin divided into four transport zones
  - 10, 50, 70, 100% delivery

Transport Zones



PS Strategy - Allocations

Discharger Group	#	Q_{pmt}	Equiv. TN Conc. (mg/L)	Group Allocation @ Discharge (lb/yr)	Group Allocation @ Estuary (lb/yr)
Muni ≥ 0.5 MGD					
- upstream	3	26.5	5.5	443,678	44,368
- downstream	28	179.5	3.7	2,021,401	1,150,139
Industry ≥ 0.5 MGD (downstream only)	3	40.6	3.2	396,900	361,902
All < 0.5 MGD	76	6.8	6.6	137,979	83,591
Total	110	253.4	---	2,999,958	**1,640,000**

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Equivalence

Discharge allocation

vs.

Estuary allocation

Individual permit compliance

Strategy/ TMDL compliance & trading

New & Expanding Facilities

- No initial allocation for new discharges
- Must obtain allocation prior to permit application
  - from existing dischargers
  - from NPS allocation, through Wetlands Restoration Fund ($22/lb TN)

New & Expanding Facilities

- May also take steps to minimize allocation:
  - advanced treatment
  - reuse or other non-discharge alternatives
  - source reduction
- Allocations “not to exceed” equivalent concentrations (3.5 mg/L muni, 3.2 mg/L industrial)

Regionalization

- Connection to another treatment system, with elimination of discharge point
  - Promises improved treatment efficiency
  - Transfer of allocation upon connection & permit rescission

Local WQ Impacts

Director shall set more stringent limits to prevent local WQ impacts

Group Compliance Approach

- Alternative approach to meeting the environmental objective
- Interested dischargers are subject to combined TN limit
- Allows dischargers the flexibility to develop their own strategy
- Reduced oversight of individual performance by DWQ

Group Compliance Approach

- Individual permits
  - Remain in effect
  - Members deemed “in compliance” with TN limits
- Group permit
  - New NPDES permit for Association and members
  - Governs nitrogen only

Permitting Approach

Individual Permits

- EL&MR:
  - Q
  - BOD
  - TSS
  - TN
  - etc.
- Reporting (DMRs)
- Special Conditions for TN

Permitting Approach

Individual Permits

- EL&MR:
  - Q TN
  - BOD etc.
  - TSS
- Reporting (DMRs)
- Spec. Cond. - TN

Group Permit

- EL: TN
  - Group
  - Individual
- Reporting
  - Annual
  - Mid-Year
  - 5-Year
- Spec. Cond.
  - Changes in
  - Membership
  - Allocations
- App. A
  - Roster
  - Allocations
- App. B

Group Permit – TN Limits

- App. A: Contains member roster and individual allocations (discharge and estuary)
- Identifies Association's TN limit: sum of members' estuary allocation

Group Permit – TN Limits

- All limits and transactions are expressed in terms of estuary allocation
- Results can then be converted back to discharge equivalents

Group Permit - Compliance

- If Association meets its TN limit,
  - Association is in compliance, and
  - all members are deemed in compliance
- If Association exceeds its TN limit,
  - Association is in violation of permit and must make offset payment, and
  - members > individual allocations are in violation

Group Permit - Compliance

- Limits are annual mass limits
- Limits in effect on Jan. 1 are in effect for the full calendar year
- Limits are revised annually, if needed *(see Reporting)*

Group Permit - Compliance

- Changes in membership and allocations not effective until included in permit
- Notification due with mid-year report

Group Permit – TN Limits

- Changes in roster or allocations are made thru minor permit mod
- Allocation transfers (trades) must first be incorporated into individual permit
  - Address potential local impacts
  - Allow for public review and comment

Group Permit - Reporting

- Annual Report - compliance report and program status
- Mid-Year Report - interim compliance (info only) and notification of upcoming member/ allocation changes
- 5-Year Report - to verify the allocation “books”

Group Permit - Appendix B

- Defines the Neuse “universe” of dischargers & allocations
- Sets boundaries for modification of Appendix A

The NRCA

- The Neuse River Compliance Association
  - Created in 2002
  - A not-for-profit corporation
  - Permit NCC000001 issued Dec 2002
  - As of 1/1/05, 25 member facilities

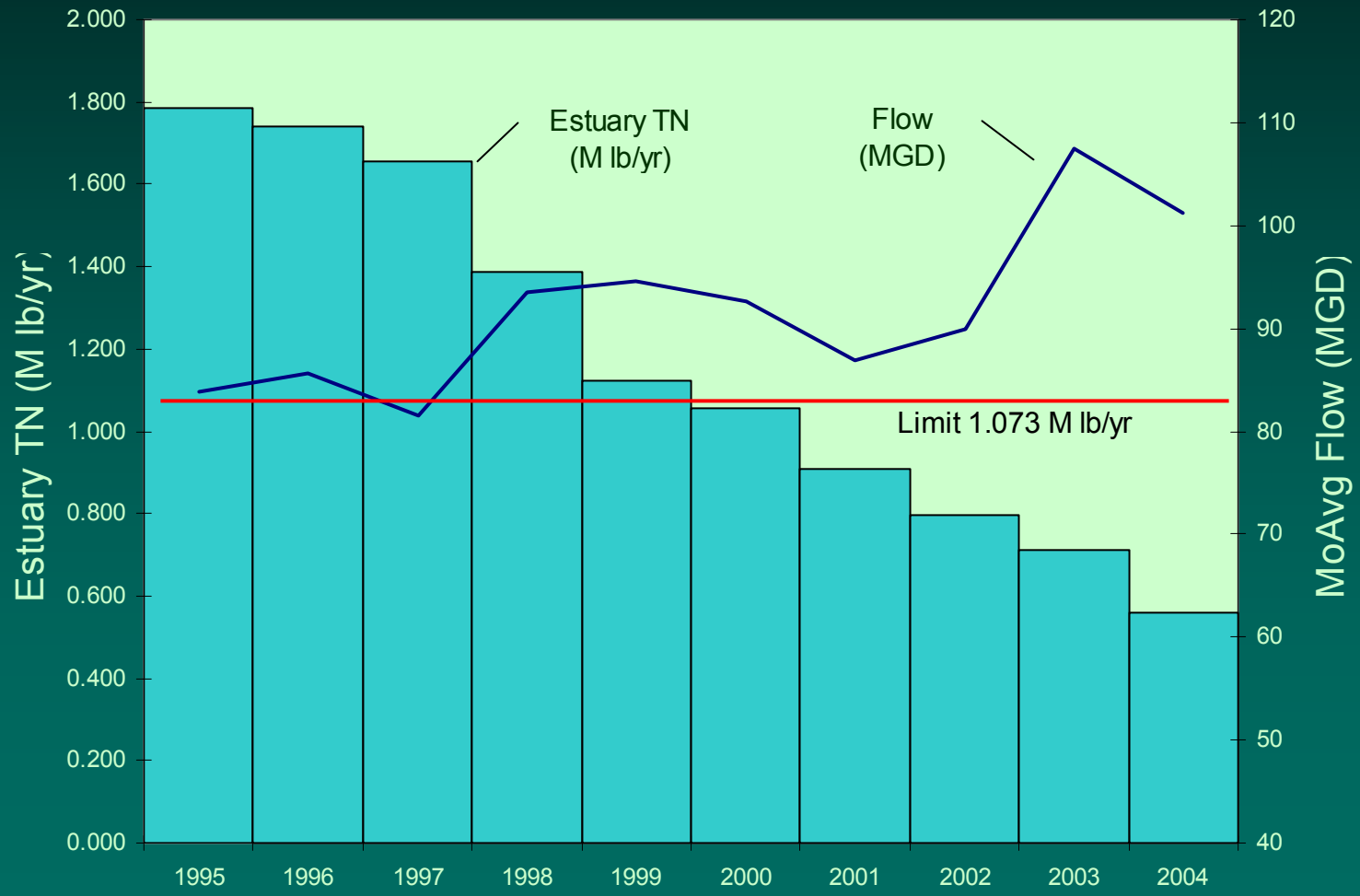
The NRCA

- Built around existing Lower Neuse Basin Association, a monitoring coalition
- Advantages
  - Existing organizational structure and fiscal systems
  - Solid working relationships - familiarity and trust

The NRCA

- Objective: all members meet individual allocations by 2009
  - 2004-2008: graduated payment scale for individual exceedances
  - Payments can be used to make offset payments, as needed, or to fund improved nutrient controls

NRCA Performance, 1995-2004



- 69% reduction at estuary since 1995
- Approx. 50% of allocation, 2004

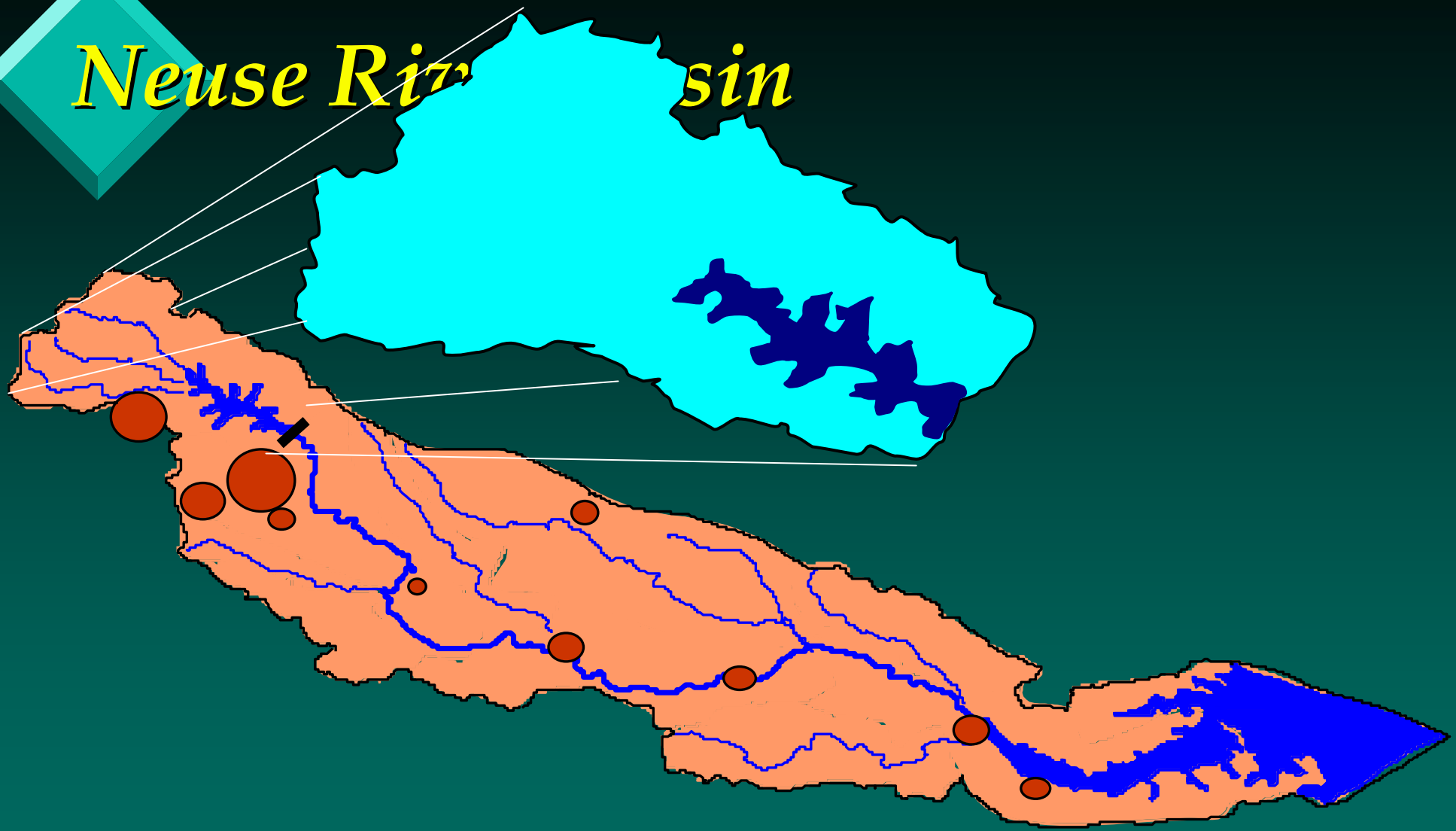
Any violations?

- Significant violations of one individual permit, 2003 & 2004
  - Federal facility w/ budget problems
  - Formal action under consideration
  - Joined NRCA effective 1/1/05
  - On-track to meet limit in 2005

Any trades?

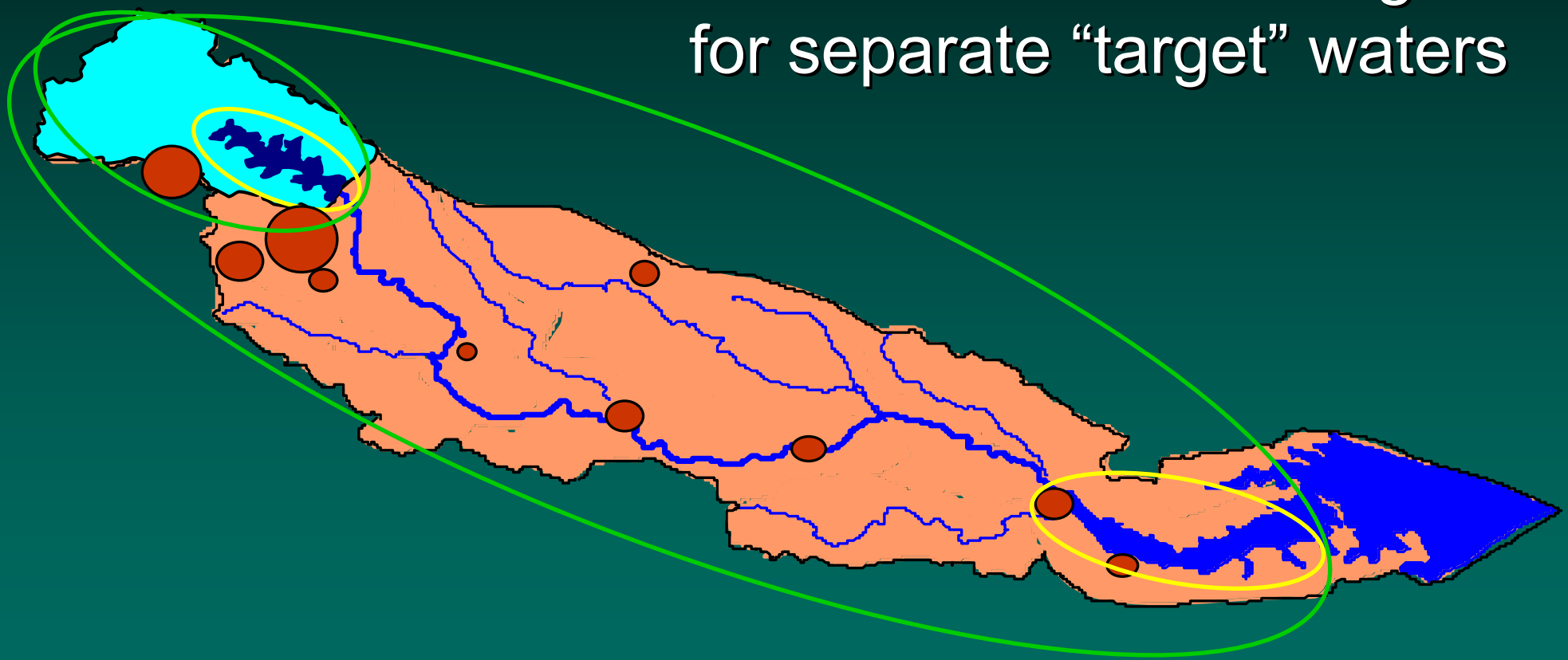
- One allocation purchase, 2003
  - Seller discharged near estuary, Buyer discharges upstream of Falls Dam
  - Transfer means 10X increase in discharge equivalent
  - “Hot spot” - lake already showing signs of impairment
  - Buyer and NRCA permit mods challenged, mods withdrawn pending use support study

Neuse River Basin



Neuse River Basin

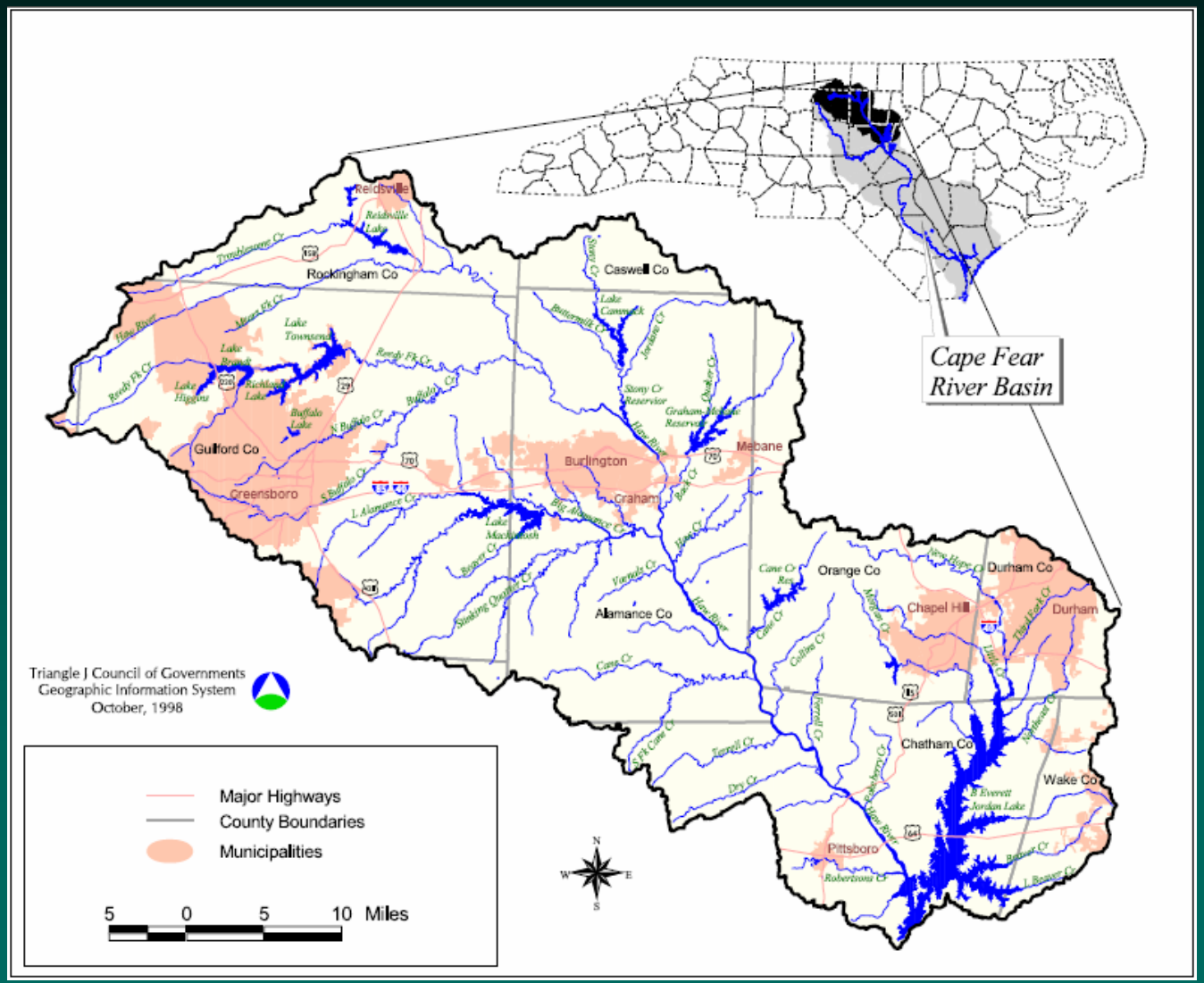
Overlaid nutrient strategies
for separate “target” waters



Evolution of Nutrient Strategies

- Neuse approach now being applied in Jordan Reservoir watershed
  - TMDL submitted, rulemaking underway
  - Two arms – one is N-limited, one is P-limited
  - Separate strategies for each arm

Jordan Reservoir



Jordan Reservoir

- Haw River Arm
  - Targets: 8% TN, 5% TP reduction
  - PS Allocations (equiv. conc.):
    - ≥ 0.1 MGD: 5.3 mg/L TN, 0.67 mg/L TP (9 facilities)
    - < 0.1 MGD: 12.0 mg/L TN, 2.0 mg/L TP (29 facilities)

Jordan Reservoir

- Upper New Hope Arm
  - Targets: 5% TN, 20% TP reduction
  - PS Allocations (equiv. conc.):
    - ≥ 0.1 MGD: 3.04 mg/L TN, 0.23 mg/L TP (4 facilities)
    - < 0.1 MGD: 12.0 mg/L TN, 2.0 mg/L TP (5 facilities)

Parting Thoughts

- Be prepared for change
- Build some flexibility into the program
- No approach will satisfy everyone

For more information:

North Carolina Division of Water Quality

http://h2o.enr.state.nc.us/

Point Source Allocations, Neuse River:

Mike Templeton
North Carolina Division of Water Quality
1617 Mail Service Center
Raleigh, NC 27699-1617

919-733-5083, ext. 541
919-733-0719 (FAX)
mike.templeton@ncmail.net